2. Risk Identification

Objectives of risk identification

To **determine** the risks that may affect the project and **document** their characteristics.

Who does it?

Participants include as many of the following as possible:

- Project team
- Risk management team
- Subject matter experts from other parts of the company
- Customers, end users
- Other project managers & Stakeholders
- Outside experts.

Nature of Process

- Iterative: New risks may arise as the project progresses

- Participants can vary but the project team should be involved

- External participants (experts/stakeholders outside the project team) can provide objective unbiased information.
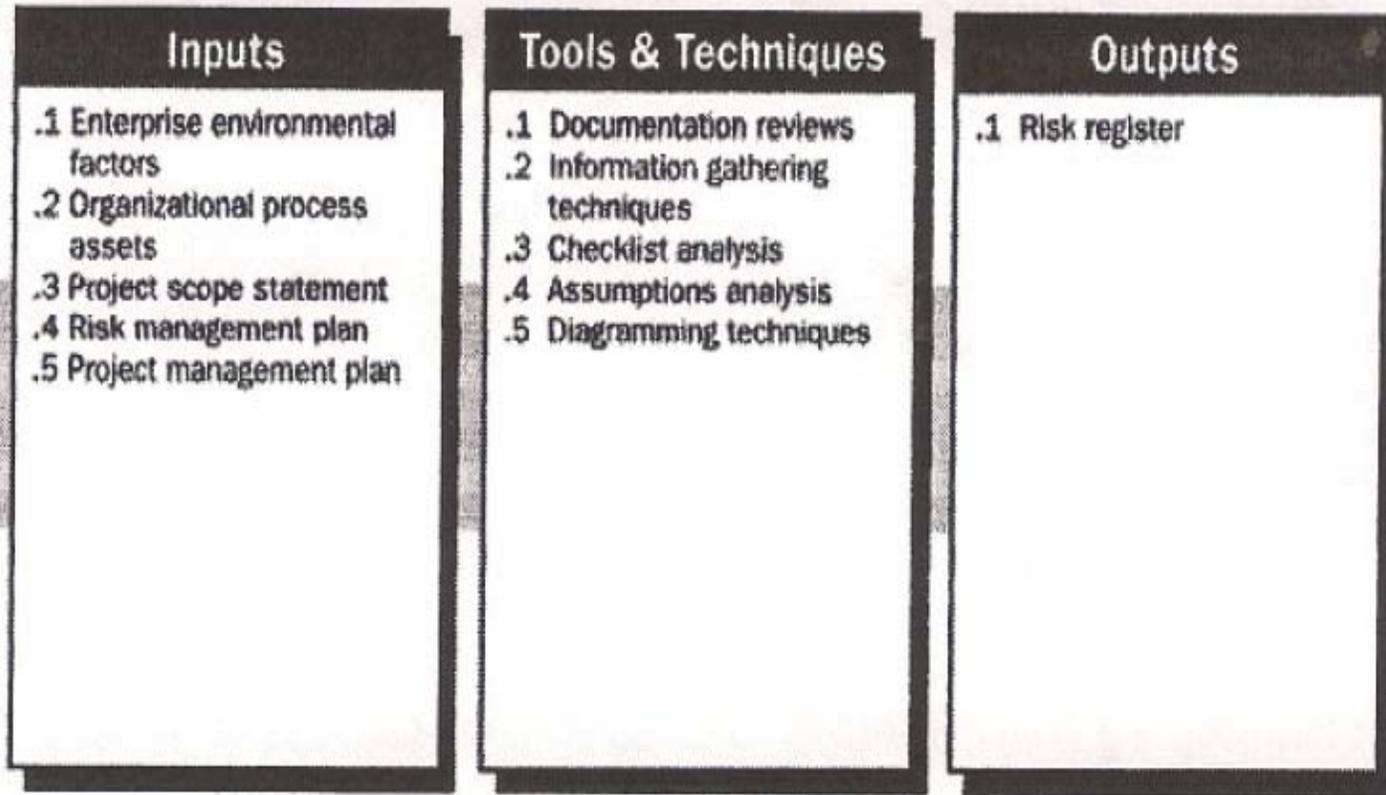
The Risk Identification Process

Inputs	Tools & Techniques	Outputs
.1 Enterprise environmental factors	.1 Documentation reviews	.1 Risk register
.2 Organizational process assets	.2 Information gathering techniques	
.3 Project scope statement	.3 Checklist analysis	
.4 Risk management plan	.4 Assumptions analysis	
.5 Project management plan	.5 Diagramming techniques	

Figure 11-6. Risk Identification: Inputs, Tools & Techniques, and Outputs

2.1 Inputs to Risk Identification

1.   Enterprise Environmental Factors
     Published information–commercial databases, academic studies, benchmarking and other published studies may be available.

2.   Organizational Process Assets
     Historical information from prior projects (**Project files)** — organizations involved in the project may maintain records of previous project results that can be used to identify risks. These may be _final project reports_ or _risk response plans_. They may include _lessons learned_ that describe _problems and their resolutions_.

3.   Risk management plan
     Assignment of roles and responsibilities, budget and schedule for risk management activities, risk categories (RBS)

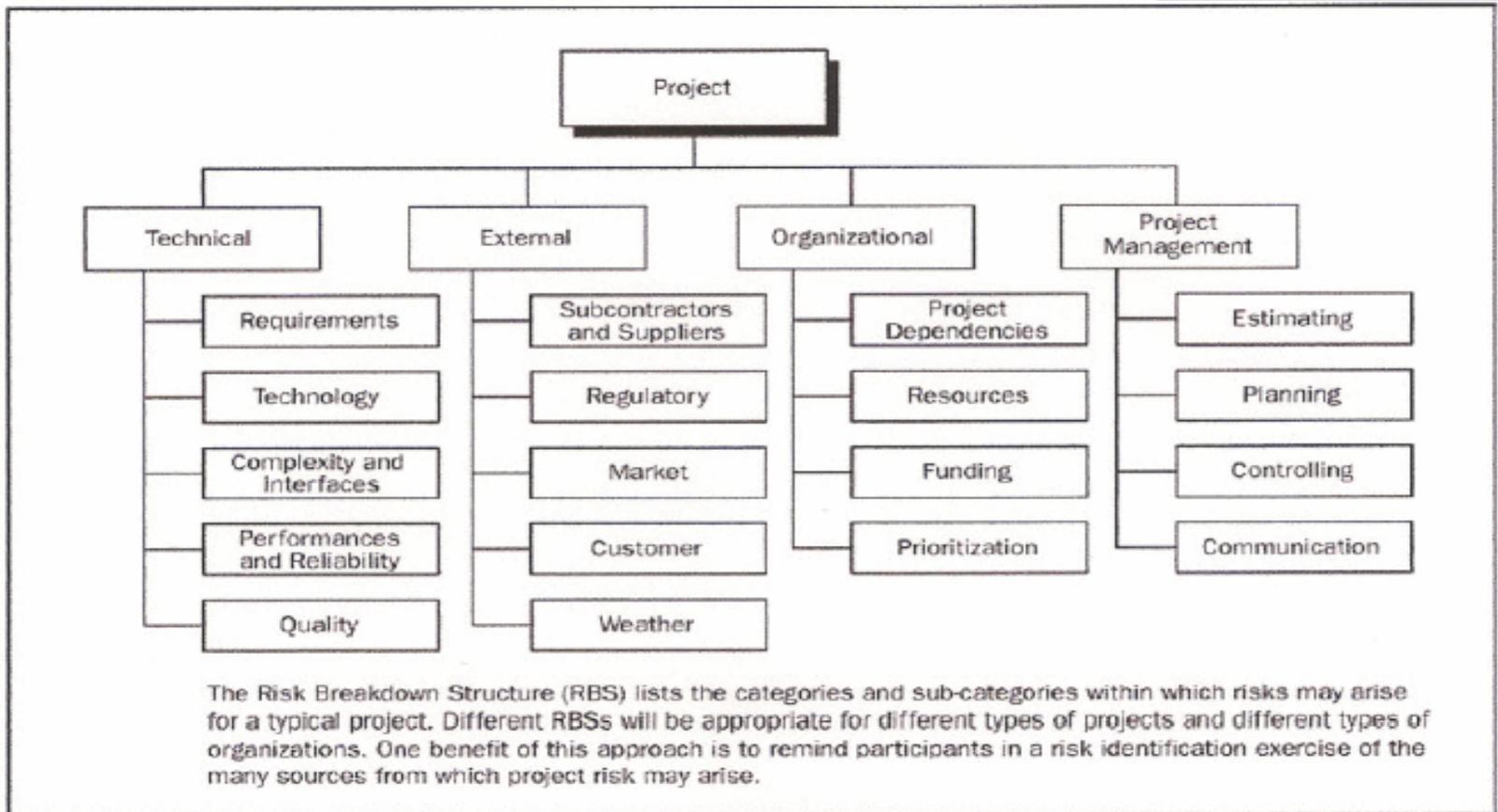# Risk Breakdown Structure: Risk Categories

The Risk Breakdown Structure (RBS) lists the categories and sub-categories within which risks may arise for a typical project. Different RBSs will be appropriate for different types of projects and different types of organizations. One benefit of this approach is to remind participants in a risk identification exercise of the many sources from which project risk may arise.

Figure 11-4. Example of a Risk Breakdown Structure (RBS)

Risk description

Labor and equipment productivity
Quality of work
Labor, equipment, and material availability
Safety
Defective material
Contractor competence
Inflation
Actual quantities of work
Labor dispute
Differing site condition
Defective design
Site access/right of way
Permits and ordinances
Change in government regulations
Delayed payment on contract
Changes in work
Financial failure-any party
Change-order negotiations
Indemnification and hold harmless
Contract-delay resolution
Acts of God
Third-party delays
Defective engineering

Source: Kangari (1995)

2.1 Inputs to Risk Identification (Continued)

4. The Project Management Plan
    Risk identification requires an understanding of the project's mission, scope, and objectives of the owner, sponsor or stakeholders.

    - The project planning documents (output from other areas) should be reviewed to identify possible risks. These documents include:

Review these Planning Documents

- Project charter.
- Project Scope
- Work breakdown structure.
- Project schedule.
- Cost estimates.
- Resource plan.
- Procurement plan.
- Assumptions list.
- Constraints list.

2.2 Tools & Techniques for Risk Identification

1. Documentation reviews
2. Information-gathering techniques
   - Brainstorming
   - Delphi technique
   - Interviewing
   - Root cause Analysis
   - Strengths, weaknesses, opportunities and threats (SWOT) analysis
3. Checklists
4. Assumptions analysis
5. Diagramming techniques
   - Cause-and-effect diagrams
   - Influence diagrams
   - System or process flow charts

2.2 Tools & Techniques for Risk Identification

1. Documentation Reviews
   Performing a structured review of *project plans* and *assumptions.* Start with prior *project files*.

2. Information-gathering Techniques
   Several methods of information gathering can be used in risk identification. These may include the list below.

Information-gathering Techniques

- Brainstorming
  Probably the most frequently used risk identification technique. The goal is to compile a comprehensive list of risks that can be addressed later in the risk analysis processes.

How Brainstorming Works?

➢ A meeting is organized with a multidisciplinary set of experts.

➢ Under the leadership of a facilitator, these people generate ideas about project risks.

➢ The brainstorming meeting proceeds without interruption, without expressing judgment or criticism of others' ideas and without regard to individuals' status in the organization.

➢ Sources of risk are identified in broad scope and posted for all to examine during the meeting.

➢ Risks are then categorized by type of risk and their definitions are sharpened.

➢ Brainstorming can be more effective if participants prepare in advance, the facilitator develops some risks in advance, and the meeting is structured by project segment and risk category

Information-gathering Techniques

- The Delphi technique
  - The Delphi technique is a method by which a consensus of experts can be reached on a subject such as project risk. Project risk experts are identified but participate anonymously.
  - The Delphi technique helps reduce bias and minimizes the influence of any one person on the outcome.

How the Delphi Technique Works?

➤ A facilitator uses a questionnaire to solicit ideas about the important project risks.

➤ The responses are submitted and put into risk categories by the facilitator.

➤ These risks are then circulated to the experts for further comment.

➤ Consensus on the main project risks may be reached after a few rounds of this process.

Information-gathering Techniques

- Interviewing
  - Risks can be identified by interviews with experienced project managers or with experts in the field.
  - The appropriate individuals are selected and briefed on the project. The interviewees identify risks on the project based on their experience, the project information, and any other sources that they find useful.

Information-gathering Techniques

- Strengths, weaknesses, opportunities and threats (SWOT) analysis

- Ensures examination of the project from each of the SWOT perspectives to increase the breadth of the risks considered

2.2 Tools & Techniques for Risk Identification

3. Checklists
   Organizations may develop checklists of risks based on information collected from past projects. The checklist is a quick way to identify risks in a new project. A checklist should not be considered as complete and the possibility of other risks should be addressed.

4. Assumptions analysis
   Consider the assumptions or scenarios used in the project plan. Assumptions analysis is a technique that explores the assumptions' accuracy. It identifies risks to the project from inaccuracy, inconsistency or incompleteness of assumptions.

5. Diagramming techniques

- Cause-and-effect diagrams useful for identifying causes of risks.

- System or process flowcharts—show how various elements of a system interrelate and the mechanism of causation.

- Influence diagrams—a graphical representation of a problem showing causal influences, time ordering of events and other relationships among variables and outcomes

2.3 Outputs from Risk Identification

- Risk Register
  Risk register is a record to document the results of the risk management processes. It contains the following information:
  - List of identified risks with description
  - List of potential responses (added after responses are developed
  - Root causes of risk.
  - Updated risk categories. Process could lead to recognition of a new risk category.